

CLAIMS

What is claimed is:

1. 1. A method for traversing a firewall, comprising:
 2. initiating a first connection;
 3. evaluating the first connection for a response from a remote system indicating a successful first connection;
 5. initiating a second connection if a successful first connection is not established;
 6. evaluating the second connection for a response from a remote system indicating a successful second connection;
 8. initiating a third connection if a successful second connection is not established; and
 9. evaluating the third connection for a response from a remote system indicating a successful third connection.
1. 2. The method of claim 1, wherein the first connection, the second connection, and the third connection is selected from the group consisting of Transmission Control Protocol (TCP) connection, User Datagram Protocol (UDP) connection, hypertext transfer protocol (HTTP) connection, hypertext transfer protocol (HTTP) connection via a proxy connection, and Internet Control Message Protocol (ICMP) connection.
1. 3. The method according to claim 2, wherein initiating a TCP connection comprises initiating a TCP connection to a predefined address and port.

1 4. The method according to claim 2, wherein initiating a HTTP connection comprises initiating
2 a HTTP connection to a predefined address using port 80.

1 5. The method according to claim 2, wherein initiating a HTTP connection via a proxy
2 connection further comprises determining a likely proxy address and port.

1 6. The method according to claim 5, wherein determining a likely proxy address and port further
2 comprises packet sniffing.

1 7. The method according to claim 6, wherein packet sniffing further comprises:
2 sampling packets;
3 extracting information from the sampled packets; and
4 building a database of likely proxy addresses and ports.

1 8. The method according to claim 7, wherein extracting information from the sampled packets
2 comprises extracting TCP port information.

1 9. The method according to claim 7, wherein extracting information from the sampled packets
2 comprises examining TCP packets for HTTP data.

1 10. The method of claim 2 further comprising using Internet Protocol (IP).

1 11. The method according to claim 10, wherein initiating a HTTP connection via a proxy
2 connection further comprises determining a likely proxy address by sampling packets and
3 extracting IP addresses.

1 12. The method of claim 2 further comprising using Ethernet with the Transmission Control
2 Protocol (TCP).

1 13. The method according to claim 12, wherein initiating a HTTP connection via a proxy
2 connection further comprises determining a likely proxy address by sampling packets and
3 extracting Ethernet addresses.

1 14. A machine-readable medium having stored thereon instructions, which when executed by a
2 processor, causes said processor to perform the following:
3 initiate a first connection;
4 evaluate the first connection for a response from a remote system indicating a successful
5 first connection;
6 initiate a second connection if a successful first connection is not established;
7 evaluate the second connection for a response from a remote system indicating a
8 successful second connection;
9 initiate a third connection if a successful second connection is not established; and
10 evaluate the third connection for a response from a remote system indicating a successful
11 third connection.

1 15. The machine-readable medium according to claim 14, further configuring said processor to
2 perform the following:

3 implement the first connection, the second connection, and the third connection selected
4 from the group consisting of Transmission Control Protocol (TCP) connection, User Datagram
5 Protocol (UDP) connection, hypertext transfer protocol (HTTP) connection, hypertext transfer
6 protocol (HTTP) proxy connection, and Internet Control Message Protocol (ICMP) connection.

1 16. The machine-readable medium according to claim 15, further configuring said processor to
2 perform the following:

3 examine network traffic; and
4 build a database of parameters likely to allow establishment of a HTTP connection via a
5 proxy connection.

1 17. A firewall traversal system comprising:

2 a main system coupled to storage;
3 a communication subsystem coupled to the main system and a communication medium;
4 a packet examining subsystem coupled to the communication subsystem; and
5 a database system coupled to the packet examining subsystem and the main system.

1 18. The system of claim 17, wherein the packet examining subsystem extracts port information.

1 19. The system of claim 18, wherein the packet examining subsystem extracts the port
2 information based upon examining packet data content.

1 20. The system of claim 17, wherein the packet examining subsystem extracts address
2 information.

1 21. The system of claim 20, wherein the packet examining subsystem extracts the address
2 information based upon examining packet data content.

1 22. A method for traversing a firewall, comprising:
2 means for initiating a first connection;
3 means for evaluating the first connection for a response from a remote system indicating
4 a successful first connection;
5 means for initiating a second connection if a successful first connection is not
6 established;
7 means for evaluating the second connection for a response from a remote system
8 indicating a successful second connection;
9 means for initiating a third connection if a successful second connection is not
10 established; and
11 means for evaluating the third connection for a response from a remote system indicating
12 a successful third connection.

1 23. The apparatus of claim 22, wherein means for initiating the first connection, means for
2 initiating the second connection, and means for initiating the third connection further comprises
3 means for initiating a connection selected from the group consisting of Transmission Control
4 Protocol (TCP) connection, User Datagram Protocol (UDP) connection, hypertext transfer

5 protocol (HTTP) connection, hypertext transfer protocol (HTTP) proxy connection, and Internet
6 Control Message Protocol (ICMP) connection.

1 24. The apparatus of claim 23, wherein means for initiating a HTTP connection via a proxy
2 connection further comprises determining a likely proxy address by sniffing packets and
3 extracting information from the packets.

1 25. The apparatus of claim 23, wherein means for initiating a HTTP connection via a proxy
2 connection further comprises determining a likely proxy address by receiving information from a
3 computer connected to the firewall.

1 26. The apparatus of claim 22, further comprising means for updating firewall traversal
2 strategies.